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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,973	06/25/2002	Thorsten Pannek	10191/2253	4773

26646 7590 06/19/2003

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EXAMINER

DEJESUS, LYDIA M

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/070,973

Applicant(s)

PANNEK ET AL.

Examiner

Lydia M. De Jesús

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Information Disclosure Statement***

2. The information disclosure statement filed June 25, 2002 has been placed of record and the references cited therein have been considered.

#### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means for insulting the first and second materials from one another, the first and second materials extending over one another at least regionally in the form of circuit traces and being electrically insulated from one another with the exception of the thermal contacts, a plurality of thermal contacts configured as one of a thermal chain or a thermal column, the additional measuring device configured to detect the first temperature and the evaluation arrangement must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2859

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Junkert et al.

[U.S. Patent 4,456, 390, hereinafter Junkert].

Junkert discloses a micropatterned thermosensor, comprising: a supporting body [29], and at least one thermocouple located on the supporting body, the thermocouple inherently including a first material and a second material which form at least in a point-wise manner, at least one thermal contact/junction with each other, at least one of the first and second material at least regionally configured in the form of one of a meander-shaped and an undulating-type circuit trace and arranged on the supporting body [29].

The micropatterned thermosensor disclosed by Junkert is an infrared sensor.

Said first material and said second material extend substantially side-by-side in the form of circuit traces, the first material and the second material electrically insulated from one another with the exception of thermal contacts, due to the supporting body.

Said thermocouple includes a plurality of thermal contacts/junctions configured as a thermal chain, at least two of the thermal contacts exposed to different temperatures. In this case, said plurality of thermal contacts/junctions are divided between cold junctions [25] and hot junction [23], wherein a first one of the thermal contacts, described as a cold junction [23], is exposed to a first temperature, the first temperature kept at least approximately constant by shielding the region of the supporting body on which the cold junctions are positioned, and a second one of the thermal contact, described as a hot junction [23], is exposed to a second temperature, the second temperature to be a measured temperature from a radiation source [8],

Art Unit: 2859

the thermosensor further comprising an additional measuring device [diode 24] configured to detect the first temperature.

6. Claims 13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Endo et al. [U.S. Patent 6,348,650 B1, hereinafter Endo].

Endo discloses a micropatterned thermosensor, comprising: a supporting body [1], and at least one thermocouple located on the supporting body, the thermocouple including a first material [3] and a second material [7] which form at least in a point-wise manner, at least one thermal contact/junction with each other, at least one of the first and second material at least regionally configured in the form of one of a meander-shaped and an undulating-type circuit trace and arranged on the supporting body.

The micropatterned thermosensor disclosed by Endo is an infrared sensor.

Said first material and said second material extend substantially side-by-side in the form of circuit traces, the first material and the second material electrically insulated from one another with the exception of thermal contacts by a dielectric layer [2a].

Said thermocouple, in this case a thermopile, includes a plurality of thermal contacts/junctions configured as a thermal chain, at least two of the thermal contacts/junctions exposed to different temperatures, wherein a first one of the thermal contacts/junction, described as a cold junction Ta, is exposed to a first temperature, the first temperature kept at least approximately constant, and a second one of the thermal contact/junction, described as a hot junction Tb, is exposed to a second temperature, the second temperature corresponding to the temperature to be measured, the thermosensor further comprising an additional measuring

Art Unit: 2859

device, in this case a thermistor, configured to detect the first temperature (see column 29, lines 33-38).

The measuring device includes a reference circuit trace, a thin film thermistor, as a sensitive component, arranged in a vicinity of the first thermal contact, and wherein the measuring device inherently includes an evaluation arrangement configured to determine a temperature dependent, electrical resistance of and the reference circuit trace.

Said first and second material includes at least of aluminum and polysilicon.

With respect to claim 19: Since the term "low thermal conductivity" in claim 19 is a relative and the specification does not provide a standard for ascertaining the requisite degree, in a broad sense, since the first and second materials of the sensor disclosed by Endo have different thermal conductivity values, it is considered inherent that one of the first and second materials will have a low thermal conductivity with respect to the other material.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2859

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Shoji et al. [U.S. Patent 6,297,723, hereinafter Shoji].

Endo discloses a micropatterned sensor as claimed, as stated above in paragraph 7, but fails to disclose said reference circuit trace i.e., thin film thermistor, including a platinum circuit trace.

However, Shoji teaches that it is very well known in the art that a platinum element has the advantage over a thermistor of reducing the manufacturing process and further teaches that a suitable type of the temperature detecting element may be chosen according to an individual use application.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the thermistor as the reference circuit trace in the sensor disclosed by Endo for a platinum element, as taught by Shoji, since both are alternate temperature detector configurations that will perform the same function, if one is replaced by the other, of generating a resistance signal as a function of temperature.

10. Claims 21 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Hori et al. [U.S. Patent 6,159,300, hereinafter Hori].

Endo discloses a micropatterned thermosensor as claimed, as stated above in paragraph 7, but fails to disclose the first material including one of doped and undoped polysilicon-germanium, and the second material including platinum.

Art Unit: 2859

However, Hori teaches that it is very well known in the art that platinum and polysilicon-germanium are among the materials used in photovoltaic devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the first and second materials of the thermocouple on the thermosensor disclosed by Endo, for other materials commonly used in the art such as polysilicon-germanium and platinum, since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

With respect to claims 23-26: The combination of Endo and Hori, discussed above, results in a thermosensor which includes the limitations recited in said claims.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Beerwerth et al. disclose a thermopile sensor for a radiation thermometer in a motion detector. Wilcox discloses a thermocouple and the method of making the same. Sano discloses a photovoltaic element. Paige discloses a microfabricated silicon thermopile sensor. Ishida discloses a method of compensating a temperature of a thermopile.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lydia M. De Jesús whose telephone number is (703) 306-5982. The examiner can normally be reached on 7:30 to 4:00 p.m., Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (703) 308-3875. The fax phone numbers for



Application/Control Number: 10/070,973

Page 8

Art Unit: 2859

the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



LDJ  
June 16, 2003

Diego F.F. Gutierrez  
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